

The Spokane Flood

During one of the most recent ice ages about 17,000 years ago, ice sheets thousands of feet thick covered what is now southern British Columbia. A lobe from the Cordilleran ice sheet crept into the Idaho panhandle and blocked the Clark Fork River with an ice dam more than 762 meters high. Water melting from the glacier further to the north backed up behind the ice dam, forming Glacial Lake Missoula. At the ice dam, the lake reached a depth of 610 meters and covered nearly 7,770 square kilometers of western Montana. It contained 2,084 cubic kilometers of water.

The climate warmed. The weakening ice dam base reached a point where it could no longer resist the increasing water pressure behind it. Catastrophically, the ice dam ruptured and the greatest flood in recorded geological history began. Water rushed from the ice dam westward at 40 cubic kilometers per hour. Upon reaching a plateau in eastern Washington, the water spread, carving out the Channeled Scabland. One of the features it created there is the present-day Grand Coulee canyon, an 80-kilometer long trench up to 10 kilometers wide with steep walls of basalt up to 274 meters high.

Rushing water also created present-day Dry Falls, 5.6 kilometers wide with a drop of more than 122 meters. At its height, the flood was 244 meters high. It formed the Camas Prairie's rolling hills, each up to 11 meters high and spaced 152 meters apart, covering an area of 16 square kilometers. The water tore across the Camas Prairie at the rate of 85 kilometers per hour.

By the time it traveled through the narrow Wallula Gap, it was flowing at 167 cubic kilometers per day. By the time the torrent reached the Pacific Ocean, it had traveled 966 kilometers and left its mark across 41,440 square kilometers of land. As incredible as this seems, the scientist who first theorized this flood, J Harlen Bretz, believed it occurred many times as the glacier moved down and reformed the ice dam after each breakthrough by lake waters.

Sources

Cataclysms of the Columbia

by John Eliot Allen and Marjorie Burns. Timber Press, 1986.

The Channeled Scablands of Eastern Washington

by Paul L. Weis and William L. Newman. Eastern Washington Press, 1989.

